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AMENDMENT

IN THE CLAIMS:

Claim 1. (Currently amended) A method for detecting a rotational velocity of a traction motor in a vehicle comprising:

obtaining a traction motor signal having at least one phase, wherein said traction motor signal is responsive to an operating condition of said traction motor wherein said traction motor is electrically unexcited;

processing said traction motor signal to create an indication result based on a frequency of said traction motor signal; and

determining rotationa<u>l</u> velocity of said traction motor based on said indication result;

wherein said vehicle includes an additiona<u>l</u> traction motor.

Claim 2. (Previously presented) The method of claim 1, further comprising a vehicle data signal.

Claim 3. (Currently amended) The method of claim 2, wherein said vehicle data signal includes a~~n~~ reference speed signal responsive to a rotational velocity of said additional traction motor.

Claim 4. (Previously presented) The method of claim 3, wherein said vehicle data signal includes a reference speed tolerance.

Claim 5. (Previously presented) The method of claim 2, wherein said processing said traction motor signal includes proceeding with said processing responsive to said vehicle data signal.

Claim 6. (Original) The method of claim 1, further comprising converting said traction motor signal into a two-phase signal responsive to said traction motor signal.

Claim 7. (Original) The method of claim 6, wherein said processing includes applying said two-phase signal to phase locked loop (PLL) circuitry so as to create a PLL signal responsive to the frequency of said two-phase signal.

Claim 8. (Original) The method of claim 7, wherein said processing further includes processing said PLL signal so as to create a two-phase unity signal responsive to the frequency of said PLL signal.

Claim 9. (Original) The method of claim 8, wherein said processing further includes combining said unity signal and said two-phase signal so as to create said indication result.

Claim 10. (Original) The method of claim 8, wherein said determining includes comparing said unity signal with said two-phase signal so as to determine the frequency error of said two-phase signal.

Claim 11. (Original) The method of claim 8, wherein said indication result is responsive to the frequency of said unity signal.

Claim 12. (Original) The method of claim 6, wherein said indication result is responsive to the frequency of said two-phase signal.

Claim 13. (Original) The method of claim 6, wherein said processing said traction motor signal includes determining the magnitude of said two-phase signal.

Claim 14. (Original) The method of claim 13, wherein said processing includes creating said indication result wherein said indication result is responsive to the magnitude of said two-phase signal.

Claim 15. (Previously presented) The method of claim 1, wherein processing said traction motor signal includes isolating a single phase of said traction motor signal.

Claim 16. (Previously presented) The method of claim 15, wherein processing said traction motor signal includes applying said single phase of said traction motor signal to a rectifier so as to create a rectified signal.

Claim 17. (Previously presented) The method of claim 16, wherein processing said traction motor signal includes applying said rectified signal to a low pass filter so as to create an indication result responsive to the magnitude of said single phase of said traction motor signal.

Claim 18. (Previously presented) The method of claim 15, wherein processing said traction motor signal includes processing said single phase of said traction motor signal so as to create said indication result responsive to the magnitude of said single phase of said traction motor signal.

Claim 19. (Previously presented) The method of claim 15, wherein processing said traction motor signal includes determining the time between predefined signal event

occurrences so as to create an indication result responsive to the frequency of said signal phase of said traction motor signal.

Claim 20. (Previously presented) The method of claim 1, wherein processing said traction motor signal includes processing said traction motor signal so as to create said indication result responsive to the frequency of said traction motor signal.

Claim 21. (Previously presented) The method of claim 15, wherein said processing said traction motor signal includes calculating said indication result using fourier analysis, wherein said indication result is responsive to the magnitude and frequency spectrum of said traction motor signal.

Claim 22. (Previously presented) The method of claim 15, wherein said processing said traction motor signal includes obtaining a vehicle data signal and applying said single phase of said traction motor signal to a band pass filter so as to create a band pass output signal responsive to said vehicle data signal.

Claim 23. (Previously presented) The method of claim 22, wherein said processing said traction motor signal includes applying said band pass output signal to a signal rectifier so as to create a rectified signal.

Claim 24. (Previously presented) The method of claim 23, wherein said processing said traction motor signal includes applying said rectified signal to a low pass filter so as to create said indication result wherein said indication result is responsive to the magnitude and frequency of said single phase of said traction motor signal.

Claim 25. (Previously presented) The method of Claim 1 wherein said rotational velocity of said traction motor is indicative of a velocity of said vehicle.

Claim 26. (Previously presented) The method of claim 1 wherein said traction motor is connected to an axle of said vehicle and the method further comprises determining if a locked axle condition exists.

Claim 27. (Previously presented) The method of claim 1, further comprising determining at least one of: determination of speed of said vehicle, vehicle adhesion control, vehicle speed control, and wheel diameter determination based on said indication result.

Claim 28. (Previously presented) The method of claim 1 wherein said traction motor signal is based on a voltage generated by a residual flux in said traction motor when rotated by movement of said vehicle.

Claim 29. (Currently amended) A data storage medium including instructions encoded in a computer readable form for causing a computer to implement a process for detecting a rotational velocity of a traction motor in a vehicle comprising:

obtaining a traction motor signal having at least one phase, wherein said traction motor signal is responsive to an operating condition of said traction motor wherein said traction motor is electrically unexcited;

processing said traction motor signal to create an indication result responsive to a frequency of said traction motor signal; and

determining rotational velocity of said traction motor based on said indication result;

wherein said vehicle includes an additional traction motor.

Claim 30. (Currently amended) A computer data signal encoded in a computer readable medium, said data signal comprising code configured to direct a computer to implement a process for detecting a rotational velocity of a traction motor in a vehicle comprising:

obtaining a traction motor signal having at least one phase, wherein said traction motor signal is responsive to an operating condition of said traction motor wherein said traction motor is electrically unexcited;

processing said traction motor signal to create an indication result responsive to a frequency of said traction motor signal; and

determining rotational velocity of said traction motor based on said indication result;

wherein said vehicle includes as additional traction motor.

Claim 31. (Currently amended) A computer processor on a vehicle for performing a process for detecting a rotational velocity of a traction motor in a vehicle comprising:

obtaining a traction motor signal having at least one phase, wherein said traction motor signal is responsive to an operating condition of said traction motor wherein said traction motor is electrically unexcited;

processing said traction motor signal to create an indication result responsive to a frequency of said traction motor signal; and

determining rotational velocity of said traction motor based on said indication result;

wherein said vehicle includes an additional traction motor.

Claim 32. (Previously Presented) A system for detecting a rotational velocity of a traction motor in a vehicle comprising:

a traction motor generating a traction motor signal having at least one phase, wherein said traction motor signal is responsive to an operating condition of said traction motor wherein said traction motor is electrically unexcited;

a voltage sensor configured to generate a signal indicative a voltage generated by residual flux in said traction motor when rotated by movement of said vehicle with said traction motor in an electrically unexcited state; and

a controller in operable communication with at least one of said traction motor and said voltage sensor configured to process said traction motor signal and said signal, and thereby create an indication result responsive to a frequency of said traction motor signal and indicative of rotational velocity of said traction motor;

wherein said vehicle includes an additional traction motor.